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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,287	11/02/2001	Je-suk Lee	SAM-0279	9042

7590 12/22/2005

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EXAMINER	
JELINEK, BRIAN J	

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/000,287	LEE ET AL.	
	Examiner	Art Unit	
	Brian Jelinek	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *1-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11/2/2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/26/2005 has been entered.

Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11-13, 15-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Roberts (U.S. Pat. No. 5,541,654).

Regarding claim 11, Roberts discloses a high-speed image pickup method of an image sensor including m horizontal lines with a plurality of pixels and an analog-to-digital converter, where m is an integer greater than zero. Roberts further discloses

accessing pixels in one or more groups, wherein a time integration feature allows the sensitivity of the array to be dynamically varied and to be different in different windows (col. 1, lines 10-35). In particular, Roberts discloses a variable rolling reset (col. 7, lines 15-64) wherein pixels are reset serially in advance of and before reading, thus providing a variable integration time that is an integer multiple of the scan time for a row of pixels.

The Examiner interprets steps a-c as corresponding in Roberts to a first window with a first exposure period and steps d-g as corresponding to a second window with a second exposure period. The Examiner notes that in steps a-c of the claims, the erasure occurs in a step after outputting; and in steps d-g the erasure occurs before outputting. Roberts does not explicitly disclose resetting a row of pixels after outputting a row pixel. However, Roberts teaches resetting a row of pixels in advance of outputting the pixels to create a variable integration time that is a integer multiple of the scan time for each row, the Examiner notes that an exposure time equal to the time to read an entire frame may be considered as either resetting a row one frame of pixels rows in advance of reading or, alternatively, as resetting a row of pixels after outputting.

Roberts teaches (a) applying a vertical selection signal in response to a vertical shift clock signal, thereby enabling a first horizontal line among the m horizontal lines; (b) applying a vertical transmission signal, thereby outputting a charge signal of the first horizontal line to the analog-to-digital converter; (c) applying a vertical erasure signal, thereby erasing the charge signal of the first horizontal line when a first window has a first exposure period equal to the read time of an entire frame (Fig. 6, windows 172 and 174; col. 7, lines 15-60); (d) shifting the vertical selection signal in response to the

vertical shift clock signal, thereby enabling a second horizontal line; (e) applying the vertical erasure signal in a second instance, thereby erasing a charge signal of the second horizontal line before the vertical transmission signal is applied in a second instance to output a charge signal of a horizontal line following the first horizontal line thereby reducing an amount of time for which charges are accumulated in the plurality of pixels of the horizontal line following the first horizontal line; (f) shifting the vertical selection signal in response to the vertical shift clock signal, thereby enabling a horizontal line following the first horizontal line; and (g) applying the vertical transmission signal, thereby outputting a charge signal of the horizontal line following the first horizontal line to the analog-to-digital converter when a second window has a second exposure period equal to an integer multiple of a row scan time.

Regarding claim 12, Roberts discloses the first horizontal line is an arbitrary horizontal line among the m horizontal lines (Fig. 6, window 172).

Regarding claim 13, Roberts discloses the second horizontal line is an arbitrary horizontal line between the first horizontal line and the m-th horizontal line (Fig. 6, window 172).

Regarding claim 15, Roberts discloses that it is conventional to increase the scanning rate, i.e. a rate at which the vertical shift clock signal is enabled can be adjusted (col. 2, lines 29-31).

Regarding claim 16, Roberts discloses a high-speed image pickup controller of an image sensor including m horizontal lines with a plurality of pixels and an analog-to-digital converter, where m is an integer greater than zero, the controller comprising: a

vertical shifter for receiving a vertical selection signal in response to a vertical shift clock signal and generating an internal vertical selection signal to enable a first horizontal line or a second horizontal line among the m horizontal lines ("ADDROW"); a vertical erasure signal generator for receiving a system clock signal, generating a vertical erasure signal for erasing a charge signal of a horizontal line, and applying the vertical erasure signal to the first horizontal line in a first instance and a horizontal line following the first horizontal line in a second instance ("ADDRST"; Fig. 6, windows 172 and 174); and a vertical transmission signal generator for receiving the system clock signal, generating a vertical transmission signal for outputting a charge signal of a horizontal line, and applying the vertical transmission signal to the first horizontal line in a first instance and a horizontal line following the first horizontal line in a second instance reducing an amount of time for which charges are accumulated in the plurality of pixels of the horizontal line following the first horizontal line (Fig. 6, windows 172 and 174; col. 7, lines 15-60).

Regarding claim 17, please see the rejection of claim 12.

Regarding claim 18, please see the rejection of claim 13.

Regarding claim 20, please see the rejection of claim 15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 14, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts (U.S. Pat. No. 5,541,654).

Regarding claim 14, Roberts does not disclose the vertical erasure signal is enabled twice during a single period of a horizontal synchronizing signal. However, Official Notice is given that it is old and well known in the art to reset a row of pixels twice in order to perform a more complete reset. As a result, it would have been obvious to one of ordinary skill in the art at the time of the invention to have enabled the vertical erasure signal twice during a single period of a horizontal synchronizing signal in order to perform a more complete reset.

Regarding claim 19, please see the rejection of claim 14.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Jelinek whose telephone number is (571) 272-7366. The examiner can normally be reached on M-F 9:00 am - 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached at (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Jelinek
12/20/2005

DAVID OMETZ
SUPERVISORY PATENT EXAMINER